

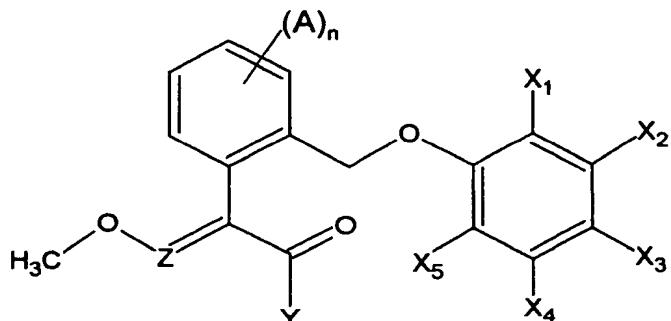
Retyped amended claim set

10/510383

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## CLAIMS

## 1. Compounds having general formula (I)



5 wherein:

- $X_1$  represents a hydrogen atom;
- $X_2$  represents a halogen atom or an R group;
- $X_3$  represents an R group when  $X_2$  = halogen, or represents a halogen atom when  $X_2$  = R;
- 10 -  $X_4$  represents a halogen atom when  $X_3$  = R, or represents a hydrogen atom when  $X_2$  = R;
- $X_5$  represents a hydrogen atom when  $X_3$  = R, or represents a halogen atom when  $X_2$  = R;
- R represents a  $C_1-C_{12}$  alkoxy or alkylthio group optionally substituted by halogen atoms, cyano groups,  $C_1-C_6$  alkoxy groups optionally halogenated,  $C_2-C_{10}$  alkoxyalkoxy groups optionally halogenated,  $C_3-C_{12}$  trialkyl silyl groups; a  $C_2-C_{12}$  alkenyloxy or alkenylthio group optionally substituted by halogen atoms; a  $C_3-C_{12}$  alkynyloxy or 15 alkynylthio group; a linear or branched  $C_3-C_{12}$  alkoxyimino group;
- 20

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noalkylenoxy or alkoxyiminoalkylenethio group; a C<sub>3</sub>-C<sub>8</sub> cycloalkoxy group optionally substituted by halogen atoms, C<sub>1</sub>-C<sub>6</sub> alkyl or haloalkyl groups; a C<sub>4</sub>-C<sub>12</sub> cycloalkylalkoxy or cycloalkylalkylthio group optionally substituted by halogen atoms, C<sub>1</sub>-C<sub>6</sub> alkyl or haloalkyl groups; an aryloxy, arylthio, heteroaryloxy, heteroarylthio, aryl-(C<sub>1</sub>-C<sub>6</sub>)alkoxy, aryl-(C<sub>1</sub>-C<sub>6</sub>)alkylthio group optionally substituted by halogen atoms, C<sub>1</sub>-C<sub>6</sub> alkyl groups optionally halogenated, C<sub>1</sub>-C<sub>6</sub> alkoxy groups optionally halogenated, nitro groups, cyano groups;

5 - A represents a halogen atom or a C<sub>1</sub>-C<sub>4</sub> alkyl, haloalkyl, alkoxy, haloalkoxy group, groups A being the same or different when n is greater than or equal to 2;

- Y represents an OCH<sub>3</sub> group or an NHCH<sub>3</sub> group;

10 15 - Z represents a CH group or a nitrogen atom N when Y = OCH<sub>3</sub>, a nitrogen atom N when Y = NHCH<sub>3</sub>;

- n is an integer ranging from 0 to 4.

2. The compounds according to claim 1, characterized in that they are an isomeric mixture in any proportion, or

20 the isomer E or the isomer Z of the compounds having formula (I).

3. The compounds according to claim 1, characterized in that they are the isomer E of the compounds having formula (I).

25 4. The compounds according to claim 1, characterized in

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that  $X_3$  represents an R group according to the above mentioned meanings,  $X_2$  and  $X_4$  represent a halogen atom,  $X_1$  and  $X_5$  represent a hydrogen atom and n is equal to 0.

5. The compounds according to claim 1, characterized in  
5 that they are selected from:

- methyl (E)-2-[2-(4-cyclopropylmethoxy-3,5-dichlorophenoxy)methyl]phenyl]-3-methoxyacrylate;
- methyl (E)-2-[2-(4-cyclopropylmethoxy-3,5-dichlorophenoxy)methyl]phenyl]-2-methoxyiminoacetate;
- 10 - (E)-2-[2-(4-cyclopropylmethoxy-3,5-dichlorophenoxy)methyl]phenyl]-N-methyl-2-methoxyiminoacetamide;
- methyl (E)-2-{2-[4-(2,2-dichlorocyclopropyl)methoxy-3,5-dichlorophenoxy]methyl}phenyl}-3-methoxyacrylate;
- methyl (E)-2-{2-[4-(2,2-dichlorocyclopropyl)methoxy-15 3,5-dichlorophenoxy]methyl}phenyl}-2-methoxyiminoacetate;
- (E)-2-{2-[4-(2,2-dichlorocyclopropyl)methoxy-3,5-dichlorophenoxy]methyl}phenyl}-N-methyl-2-methoxyiminoacetamide;
- 20 - methyl (E)-2-{2-[3,5-dichloro-4-(3,3-dichloroprop-2-enyloxy)phenoxy]methyl}phenyl}-3-methoxyacrylate;
- methyl (E)-2-{2-[3,5-dichloro-4-(3,3-dichloroprop-2-enyloxy)phenoxy]methyl}phenyl}-2-methoxyiminoacetate;
- (E)-2-{2-[3,5-dichloro-4-(3,3-dichloroprop-2-enyloxy)-phenoxy]methyl}phenyl}-N-methyl-2-methoxyiminoacetamide;
- 25 - methyl (E)-2-{2-[3,5-dichloro-4-(3-chloro-4,4,

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trifluorobut-2-enyloxy)phenoxyethyl]phenyl}-3-methoxyacrylate;

- methyl (E)-2-{2-[3,5-dichloro-4-(3-chloro-4,4,4-trifluorobut-2-enyloxy)phenoxyethyl]phenyl}-2-methoxyiminoacetate;

- (E)-2-{2-[3,5-dichloro-4-(3-chloro-4,4,4-trifluorobut-2-enyloxy)phenoxyethyl]phenyl}-N-methyl-2-methoxyiminoacetamide;

- methyl (E)-2-[2-(4-cyclobutylmethoxy-3,5-dichlorophenoxyethyl)phenyl]-3-methoxyacrylate;

- methyl (E)-2-{2-[3,5-dichloro-4-(3,3-dimethylbutoxy)phenoxyethyl]phenyl}-3-methoxyacrylate;

- methyl (E)-2-{2-[3,5-dichloro-4-(3-methylbutoxy)phenoxyethyl]phenyl}-3-methoxyacrylate;

15 - methyl (E)-2-[2-(4-cyclohexylmethoxy-3,5-dichlorophenoxyethyl)phenyl]-3-methoxyacrylate;

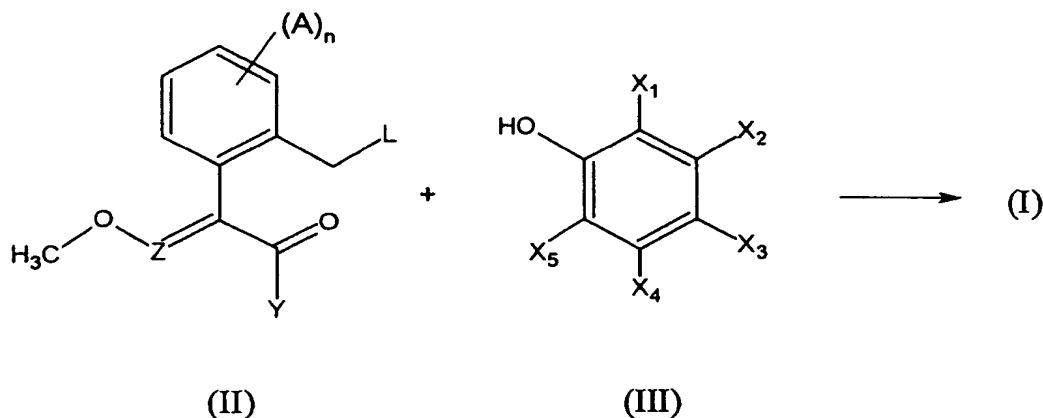
- methyl (E)-2-{2-[3,5-dichloro-4-(2,4-dichlorobenzyloxy)phenoxyethyl]phenyl}-3-methoxyacrylate;

- methyl (E)-2-{2-[3,5-dichloro-4-(4-chlorobenzyloxy)phenoxyethyl]phenyl}-3-methoxyacrylate.

20 6. The process for the preparation of the compounds having general formula (I), according to any of the claims 1-5, characterized in that it includes a condensation reaction of a compound having general formula (II) with a phenol having general formula (III), according to

the reaction scheme 1:

Scheme 1



wherein ,  $X_1$ ,  $X_2$ ,  $X_3$ ,  $X_4$ ,  $X_5$ ,  $A$ ,  $Y$ ,  $Z$  and  $n$  have the meanings defined above,  $L$  represents a leaving group such as a chlorine atom, a bromine atom or a  $\text{R}_L\text{SO}_3^-$  group wherein  $\text{R}_L$  represents a  $\text{C}_1-\text{C}_6$  alkyl or haloalkyl, or a phenyl optionally substituted.

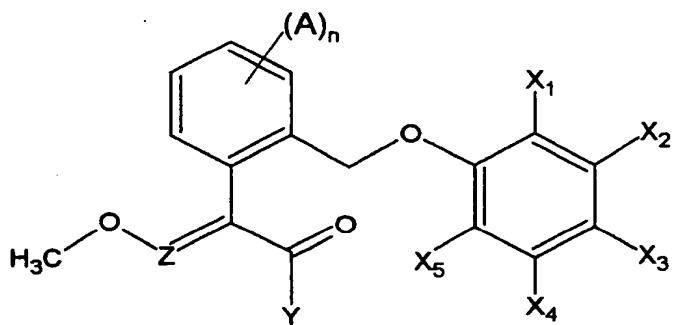
7. The process according to claim 6, characterized in that the reaction is carried out in an inert organic solvent, at a temperature ranging from  $0^\circ\text{C}$  and the boiling temperature of the reaction mixture, possibly in the presence of an inorganic or organic base.

8. The process according to claim 7, characterized in that the solvent is selected from alcohols, ethers, esters, ketones, chlorinated hydrocarbons, aromatic hydrocarbons, aliphatic hydrocarbons, aprotic dipolar solvents.

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9. The process according to claim 7, characterized in that the inorganic base is selected from hydrides, hydroxides, carbonates of alkaline or alkaline-earth metals.
- 5 10. The process according to claim 7, characterized in that the organic base is selected from pyridine, dimethylaminopyridine, aliphatic amines, cyclic amines, alcohohlates of alkaline metals.
11. Use of the compounds having general formula (I)

10



(I)

wherein:

- X<sub>1</sub> represents a hydrogen atom;
- X<sub>2</sub> represents a halogen atom or an R group;
- 15 - X<sub>3</sub> represents an R group when X<sub>2</sub> = halogen, or represents a halogen atom when X<sub>2</sub> = R;
- X<sub>4</sub> represents a halogen atom when X<sub>3</sub> = R, or represents a hydrogen atom when X<sub>2</sub> = R;
- X<sub>5</sub> represents a hydrogen atom when X<sub>3</sub> = R, or represents a halogen atom when X<sub>2</sub> = R;

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- R represents a C<sub>1</sub>-C<sub>12</sub> alkoxy or alkylthio group optionally substituted by halogen atoms, cyano groups, C<sub>1</sub>-C<sub>6</sub> alkoxy groups optionally halogenated, C<sub>2</sub>-C<sub>10</sub> alkoxyalkoxy groups optionally halogenated, C<sub>3</sub>-C<sub>12</sub> trialkyl silyl groups; a C<sub>2</sub>-C<sub>12</sub> alkenyloxy or alkenylthio group optionally substituted by halogen atoms; a C<sub>3</sub>-C<sub>12</sub> alkynyoxy or alkynylthio group; a linear or branched C<sub>3</sub>-C<sub>12</sub> alkoxyiminoalkylidenoxy or alkoxyiminoalkylidentho group; a C<sub>3</sub>-C<sub>8</sub> cycloalkoxy group optionally substituted by halogen atoms, C<sub>1</sub>-C<sub>6</sub> alkyl or haloalkyl groups; a C<sub>4</sub>-C<sub>12</sub> cycloalkylalkoxy or cycloalkylalkylthio group optionally substituted by halogen atoms, C<sub>1</sub>-C<sub>6</sub> alkyl or haloalkyl groups; an aryloxy, arylthio, heteroaryloxy, heteroarylthio, aryl-(C<sub>1</sub>-C<sub>6</sub>)alkoxy, aryl-(C<sub>1</sub>-C<sub>6</sub>)alkylthio group optionally substituted by halogen atoms, C<sub>1</sub>-C<sub>6</sub> alkyl groups optionally halogenated, nitro groups, cyano groups;
  - A represents a halogen atom or a C<sub>1</sub>-C<sub>4</sub> alkyl, haloalkyl, alkoxy, haloalkoxy group, groups A being the same or different when n is greater than or equal to 2;
  - Y represents an OCH<sub>3</sub> group or an NHCH<sub>3</sub> group;
  - Z represents a CH group or a nitrogen atom N when Y = OCH<sub>3</sub>, a nitrogen atom N when Y = NHCH<sub>3</sub>;
  - n is an integer ranging from 0 to 4;
- 25 as acaricides and/or insecticides and/or fungicides.

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12. The use according to claim 11 of the isomers E of the compounds having formula (I).
13. The use according to claim 11, wherein X<sub>3</sub> represents an R group according to the above meanings, X<sub>2</sub> and X<sub>4</sub> represent a halogen atom, X<sub>1</sub> and X<sub>5</sub> represent a hydrogen atom and n is equal to 0.
14. The use according to claim 11, wherein the compounds of formula (I) are selected from:
- methyl (E)-2-[2-(4-cyclopropylmethoxy-3,5-dichlorophenoxy)methyl]phenyl]-3-methoxyacrylate;
  - methyl (E)-2-[2-(4-cyclopropylmethoxy-3,5-dichlorophenoxy)methyl]phenyl]-2-methoxyiminoacetate;
  - (E)-2-[2-(4-cyclopropylmethoxy-3,5-dichlorophenoxy)methyl]phenyl]-N-methyl-2-methoxyiminoacetamide;
  - 15 - methyl (E)-2-{2-[4-(2,2-dichlorocyclopropyl)methoxy-3,5-dichlorophenoxy]methyl}phenyl]-3-methoxyacrylate;
  - methyl (E)-2-{2-[4-(2,2-dichlorocyclopropyl)methoxy-3,5-dichlorophenoxy]methyl}phenyl]-2-methoxyiminoacetate;
  - (E)-2-{2-[4-(2,2-dichlorocyclopropyl)methoxy-3,5-di-20 chlorophenoxy]methyl}phenyl]-N-methyl-2-methoxyiminoacetamide;
  - methyl (E)-2-{2-[3,5-dichloro-4-(3,3-dichloroprop-2-enyloxy)phenoxy]methyl}phenyl]-3-methoxyacrylate;
  - methyl (E)-2-{2-[3,5-dichloro-4-(3,3-dichloroprop-2-enyloxy)phenoxy]methyl}phenyl]-2-methoxyiminoacetate;

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- (E)-2-{2-[3,5-dichloro-4-(3,3-dichloroprop-2-enyloxy)-phenoxyethyl]phenyl}-N-methyl-2-methoxyiminoacetamide;
  - methyl (E)-2-{2-[3,5-dichloro-4-(3-chloro-4,4,4-trifluorobut-2-enyloxy)phenoxyethyl]phenyl}-3-methoxy-5-acrylate;
  - methyl (E)-2-{2-[3,5-dichloro-4-(3-chloro-4,4,4-trifluorobut-2-enyloxy)phenoxyethyl]phenyl}-2-methoxyiminoacetate;
  - (E)-2-{2-[3,5-dichloro-4-(3-chloro-4,4,4-trifluorobut-2-enyloxy)phenoxyethyl]phenyl}-N-methyl-2-methoxyiminoacetamide;
  - methyl (E)-2-[2-(4-cyclobutylmethoxy-3,5-dichlorophenoxyethyl)phenyl]-3-methoxyacrylate;
  - methyl (E)-2-[2-[3,5-dichloro-4-(3,3-dimethylbutoxy)phenoxyethyl]phenyl]-3-methoxyacrylate;
  - methyl (E)-2-[2-[3,5-dichloro-4-(3-methylbutoxy)phenoxyethyl]phenyl]-3-methoxyacrylate;
  - methyl (E)-2-[2-(4-cyclohexylmethoxy-3,5-dichlorophenoxyethyl)phenyl]-3-methoxyacrylate;
  - 20 - methyl (E)-2-{2-[3,5-dichloro-4-(2,4-dichlorobenzyloxy)phenoxyethyl]phenyl}-3-methoxyacrylate;
  - methyl (E)-2-{2-[3,5-dichloro-4-(4-chlorobenzyloxy)phenoxyethyl]phenyl}-3-methoxyacrylate.
15. The use according to any of the claims 11-14 for the  
25 control of adults, larvae and eggs of mites and insects

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which are harmful in the agrarian, civil and zootechnical field.

16. The use according to claim 15, wherein the harmful mites and/or insects are tetranychidae (*Tetranychus urticae*, *Tetranychus telarius*, *Tetranychus cinnabarinus*, *Eotetranychus carpini*, *Panonychus ulmi*, *Panonychus cincti*), eriophyidae (*Phytoptus avellanae*, *Eriophyes vitis*, *Eriophyes piri*) tarsonemidae (*Steneotarsonemus pallidus*), hemiptera (*Macrosiphum euphorbiae*, *Aphis fabae*, *Myzus persicae*), lepidoptera (*Spodoptera spp.*, *Heliothis spp.*, *Chilo spp.*, *Carpocapsa pomonella*), coleoptera (*Leptinotarsa decemlineata*, *Phaedon cochleariae*), diptera (*Aedes spp.*, *Culex spp.*, *Musca spp.*).

17. The use according to any of the claims 11-14 for the control of phytopathogenous fungi such as: *Helminthosporium spp.*, *Erysiphe spp.*, *Puccinia spp.*, *Plasmopara viticola*, *Pythium spp.*, *Phytophthora spp.*, *Rhynchosporium spp.*, *Septoria spp.*, *Sphaerotheca fuliginea*, *Podosphaera leucotricha*, *Pyricularia oryzae*, *Uncinula necator*, *Venturia spp.*, *Botrytis cinerea*, *Fusarium spp.*, *Alternaria spp.*, *Cercospora spp.*.

18. The use according to any of the claims 11-14 for the control of mites, insects and fungi which are harmful in crops of agrarian and horticultural interest, on domestic and breeding animals, in environments frequented by human

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beings.

19. A method for controlling mites and/or insects and/or phytopathogenous fungi in crops of agrarian and horticultural interest, and/or on domestic and breeding animals, 5 and/or in environments frequented by human beings, by the application of the compounds having general formula (I) according to one of the claims 1-5.

20. The method according to claim 19, characterized in that the quantity of compound to be applied varies from 10 10 g to 5 kg per hectare.

21. Acaricidal and/or insecticidal and/or fungicidal compositions containing as active principle one or more compounds having general formula (I) according to one of the claims 1-5.

15 22. The compositions according to claim 21, comprising other active principles compatible with the compounds having general formula (I), such as other acaricides/insecticides, fungicides, phyto-regulators, antibiotics, herbicides, fertilizers.

20 23. The compositions according to claim 21, characterized in that the concentration of active principle ranges from 1 to 90%, preferably from 5 to 50%.